We claim:

1. A heat exchanger comprising a housing including a cylindrical shell closed by a top cover member and a bottom cover member, a plurality of first heat transfer plates and a plurality of second heat transfer plates located within said cylindrical shell with said first heat transfer plates interleaved with said second heat transfer plates in alternating stacked relationship and with spaces between said first and second heat transfer plates, each of said first and second heat transfer plates being formed with channels on opposite sides of said each of said heat transfer plates that provide first and second fluid passages for fluid flow between the heat transfer plates, said first fluid passages for a first fluid in alternate spaces and said second fluid passages for a second fluid in remaining spaces, and a corrugated member 50 made of spring steel located in said housing adjacent one of said cover member and serving to compensate for any expansion of said heat transfer plates along the longitudinal axis of the housing during operation of said heat exchanger.

2. The heat exchanger of claim 1 wherein said first and second heat transfer plates are formed with an inlet port and an outlet port in the body of said first and second heat transfer plates for fluid connection with said first fluid passages.

3. The heat exchanger of claim 2 wherein said cylindrical shell is formed with a first inlet nozzle for feeding said second fluid to said second fluid passages and said cylindrical shell also being formed with a first outlet nozzle diametrically opposed to said first inlet nozzle for permitting said second fluid to exit said heat exchanger.

4. The heat exchanger of claim 3 wherein the periphery of said first and second heat transfer plates is uniformly spaced from the inner surface of said cylindrical shell so as to provide a chamber that is divided by a pair of diametrically opposed seals positioned within said chamber into an arcuate inlet chamber connected to said first inlet nozzle and an arcuate outlet chamber connected to said first outlet nozzle.

5. The heat exchanger of claim 4 wherein said top cover member is formed with a second inlet nozzle and a second outlet nozzle whereby said second inlet nozzle feeds said first fluid to said inlet port and said second outlet nozzle permits said first fluid to exit said heat exchanger after flowing through said second fluid passages.

6. The heat exchanger of claim 5 wherein said top cover member and said bottom cover member are welded to said cylindrical shell.

7. The heat exchanger of claim 5 wherein said cylindrical shell is formed with a circular flange and said top cover member is adapted to be bolted to said flange.

8. The heat exchanger of claim 5 wherein said corrugated member takes the form of a disk formed with circular corrugations.

9. The heat exchanger of claim 5 wherein said plurality of first heat transfer plates and said plurality of second heat transfer plates form a series of cassettes stacked on top of each other.

10. The heat exchanger of claim 9 wherein each of said cassettes comprise a first heat transfer plate and an identical second transfer plate which has been rotated 180 degrees and turned over and superimposed upon said first heat transfer plate.

11. The heat exchanger of claim 10 wherein each of said first and second heat transfer plates is formed with a plurality of parallel corrugations which are V-shaped in cross-section.

12. The heat exchanger of claim 10 wherein said corrugations of said first heat transfer plate and said corrugations of said second heat transfer plate of each of said cassettes are at a fixed angle relative to each other.

13. The heat exchanger of claim 12 wherein each cassette has the first and second heat transfer plates welded to each other by a weld surrounding said inlet port and a weld surrounding said outlet port and the periphery of adjacent cassettes are welded to each other so as to provide a core for said heat exchanger.

14. The heat exchanger of claim 12 wherein said first transfer plate and said second heat transfer plate each has a first circular track surrounding each of said inlet and outlet ports, and a first O-ring made of elastomeric material located in said first circular track.

15. The heat exchanger of claim 14 wherein said first transfer plate and said second heat transfer plate each has a second circular track adjacent the periphery of

said first and second plates, and a second O-ring made of elastomeric material is located in said second circular track.

16. The heat exchanger of claim 4 wherein said pair of seals are positioned within said chamber along an axis which is substantially normal to an axis passing through the centers of said first inlet nozzle and said first outlet nozzle.

17. The heat exchanger of claim 16 wherein each of said pair of seals comprises a metal bar and a pair of identical metal clips.

18. The heat exchanger of claim 17 wherein said bar has one edge thereof provided with uniformly vertically spaced projections that fit into outer peripheral spaces formed by the heat transfer plates of each of said cassettes.

19. The heat exchanger of claim 18 wherein said metal clips are J-shaped in cross section and are located on opposed sides of said bar.

20. The heat exchanger of claim 4 wherein each of said seals comprises an elastomeric pad held securely in place by compression imparted by a metal support bar having a curved cross-sectional configuration conforming to the inner surface of said cylindrical shell.